

Chapter D3: Commercial Fishing Valuation

INTRODUCTION

This chapter presents the results of the commercial fishing benefits analysis for the Mid-Atlantic region. Section D3-1 details the estimated losses under current, or baseline, conditions. Section D3-2 presents the expected benefits in the region attributable to the rule. Chapter A10 details the methods used in this analysis.

CHAPTER CONTENTS

| | | |
|------|-----------------|------|
| D3-1 | Baseline Losses | D3-1 |
| D3-2 | Benefits | D3-2 |

Note that all results have been sample weighted in this version. In the final revision results will be reported unweighted.

D3-1 BASELINE LOSSES

Table D3-1 provides EPA's estimate of the value of gross revenues lost in commercial fisheries resulting from the impingement of aquatic species at facilities in the Mid-Atlantic region. Table D3-2 displays this information for entrainment. Total annual revenue losses are approximately \$8.4 million, assuming a 3 percent discount rate.

| Table D3-1: Annual Commercial Fishing Gross Revenues Lost Due to Impingement at Facilities in the Mid-Atlantic Region | | | | |
|---|----------------------------------|---|-----------------------------------|-----------------------------------|
| Species | Estimated Pounds of Harvest Lost | Estimated Value of Harvest Lost (in 2002 dollars) | | |
| | | Undiscounted | Discounted Using 3% Discount Rate | Discounted Using 7% Discount Rate |
| Alewife | 328 | 36 | 32 | 28 |
| American shad | 15 | 9 | 8 | 7 |
| Atlantic croaker | 106,026 | 33,921 | 31,426 | 28,585 |
| Atlantic menhaden | 32,499,546 | 2,106,126 | 2,016,725 | 1,908,528 |
| Blue crab | 93,769 | 69,777 | 68,209 | 66,264 |
| Other (commercial) | 568,102 | 296,446 | 278,800 | 257,851 |
| Other (rec. and com.) | 168,832 | 88,099 | 82,855 | 76,629 |
| Spot | 976,498 | 411,804 | 390,726 | 366,202 |
| Striped bass | 12,591 | 20,911 | 17,743 | 14,461 |
| Summer flounder | 21,279 | 32,232 | 28,672 | 24,904 |
| Weakfish | 148,021 | 95,423 | 90,774 | 85,387 |
| White perch | 3,494 | 2,067 | 1,858 | 1,622 |
| Windowpane | 61 | 22 | 20 | 17 |
| Winter flounder | 4,663 | 5,466 | 4,835 | 4,158 |
| Other unidentified species (from forage losses) | 5,699 | 2,182 | 1,965 | 1,730 |
| TOTAL | 34,608,925 | 3,164,522 | 3,014,650 | 2,836,373 |

| Table D3-2: Annual Commercial Fishing Gross Revenues Lost Due to Entrainment at Facilities in the Mid-Atlantic Region | | | | |
|--|---|--|--|--|
| Species | Estimated Pounds of Harvest Lost | Estimated Value of Harvest Lost (in 2002 dollars) | | |
| | | Undiscounted | Discounted Using 3% Discount Rate | Discounted Using 7% Discount Rate |
| Alewife | 41 | 4 | 4 | 3 |
| American shad | 3,431 | 2,042 | 1,771 | 1,476 |
| Atlantic croaker | 2,817,684 | 901,465 | 810,842 | 709,973 |
| Atlantic menhaden | 1,246,665 | 80,790 | 75,107 | 68,421 |
| Blue crab | 1,597,900 | 1,189,060 | 1,128,495 | 1,055,323 |
| Other (commercial) | 5,977 | 3,119 | 2,848 | 2,536 |
| Other (rec. and com.) | 2,023,155 | 1,055,717 | 963,959 | 858,198 |
| Spot | 3,769,772 | 1,589,771 | 1,464,464 | 1,321,236 |
| Striped bass | 99,549 | 165,330 | 139,056 | 111,601 |
| Weakfish | 535,741 | 345,368 | 318,975 | 288,828 |
| White perch | 3,671 | 2,172 | 1,944 | 1,687 |
| Winter flounder | 17,197 | 20,156 | 17,311 | 14,330 |
| Other unidentified species (from forage losses) (secondary) | 1,963,709 | 751,707 | 676,967 | 595,959 |
| TOTAL | 14,084,491 | 6,106,702 | 5,601,742 | 5,029,570 |

D3-2 BENEFITS

As described in Chapter A10, EPA estimates that 0 to 40 percent of the gross revenue losses represent surplus losses to producers, assuming no change in prices or fishing costs. The 0 percent estimate, of course, results in loss estimates of \$0. The 40 percent estimates, as presented in the Table D3-3, total approximately \$3.3 million when a 3 percent discount rate is assumed.

The expected reductions in I&E attributable to changes at facilities required by the rule are 53.5 percent for impingement and 47.9 percent for entrainment. Total annual benefits are estimated by applying these estimated reductions to the annual producer surplus loss. As presented in Table D3-3, this results in total annual benefits of \$1.7 million, assuming a 3 percent discount rate.

Table D3-3: Annual Commercial Fishing Benefits Attributable to Phase II Rule at Facilities in the Mid-Atlantic Region (million 2002\$), Assumes Compliance in 2005

| | Impingement | Entrainment | Total |
|---|--------------|--------------|--------------|
| Baseline loss - gross revenue | | | |
| Undiscounted | \$3.2 | \$6.1 | \$9.3 |
| 3% discount rate | \$2.9 | \$5.4 | \$8.4 |
| 7% discount rate | \$2.6 | \$4.7 | \$7.3 |
| Producer surplus lost - low | \$0.0 | \$0.0 | \$0.0 |
| Producer surplus lost - high (gross revenue * 0.4) | | | |
| Undiscounted | \$1.3 | \$2.4 | \$3.7 |
| 3% discount rate | \$1.2 | \$2.2 | \$3.3 |
| 7% discount rate | \$1.1 | \$1.9 | \$2.9 |
| Expected reduction due to rule^a | 53.5% | 47.9% | --- |
| Benefits attributable to rule - low | \$0.0 | \$0.0 | \$0.0 |
| Benefits attributable to rule - high | | | |
| Undiscounted | \$0.7 | \$1.2 | \$1.8 |
| 3% discount rate | \$0.6 | \$1.0 | \$1.7 |
| 7% discount rate | \$0.6 | \$0.9 | \$1.5 |

^a Estimated based on EPA's assumptions. EPA's assumption about the amount of electricity that will be produced in the future differs very slightly from DOE's. For the Mid-Atlantic region the EPA and DOE estimates are the same.